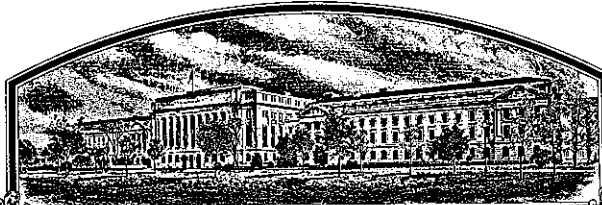


No.

8200173



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Texas Agricultural Experiment Station

Whereas, THERE HAS BEEN PRESENTED TO THE
Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT 1930, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

ONION

'Texas Grano 1105Y'



In Testimony Whereof, I have hereunto set
my hand and caused the seal of the Plant
Variety Protection Office to be affixed
at the City of Washington
this 30th day of June in
the year of our Lord one thousand nine
hundred and eighty-three.

Attest:

Kenneth H. ...
Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

John R. Block
Secretary of Agriculture

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, POULTRY, GRAIN & SEED DIVISION

FORM APPROVED
OMB NO. 40-R3622

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

No certificate for plant variety protection may be issued unless a completed application form has been received (5 U.S.C. 553).

INSTRUCTIONS: See Reverse.

1a. TEMPORARY DESIGNATION OF VARIETY TX 442		1b. VARIETY NAME Texas Grano 1105Y		FOR OFFICIAL USE ONLY PV NUMBER 8200173	
2. KIND NAME Onion		3. GENUS AND SPECIES NAME Allium cepa L.		FILING DATE 9/7/82	TIME 8:00 A.M.
4. FAMILY NAME (BOTANICAL) Lilliaceae		5. DATE OF DETERMINATION May 1982		FEE RECEIVED \$ 500.00 \$ 250.00	DATE 9/7/82 6/1/83
6. NAME OF APPLICANT(S) Texas Agricultural Experiment Station		7. ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code) Texas A&M University College Station, TX 77843		8. TELEPHONE AREA CODE AND NUMBER 713/845-4051 713/845-4757	
9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: (Corporation, partnership, association, etc.) State Experiment Station		10. IF INCORPORATED, GIVE STATE AND DATE OF INCORPORATION Texas		11. DATE OF INCORPORATION 1876	
12. NAME AND MAILING ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS: Send Policy, Release Committee Foundation Seed Service The Texas Agricultural Experiment Station College Station, TX 77843					
13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED: <input checked="" type="checkbox"/> 13A. Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.) <input checked="" type="checkbox"/> 13B. Exhibit B, Novelty Statement. <input checked="" type="checkbox"/> 13C. Exhibit C, Objective Description of the Variety (Request form from Plant Variety Protection Office.) <input checked="" type="checkbox"/> 13D. Exhibit D, Additional Description of the Variety.					
14a. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(a). (If "Yes," answer 14B and 14C below.) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO					
14b. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		14c. IF "YES," TO 14B, HOW MANY GENERATIONS OF PRODUCTION BEYOND BREEDER SEED? <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED			
15a. DID THE APPLICANT(S) FILE FOR PROTECTION OF THIS VARIETY IN OTHER COUNTRIES? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO (If "Yes," give name of countries and dates.) Protection will be filed in several countries in near future					
15b. HAVE RIGHTS BEEN GRANTED THIS VARIETY IN OTHER COUNTRIES? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO (If "Yes," give name of countries and dates.)					
16. DOES THE APPLICANT(S) AGREE TO THE PUBLICATION OF HIS/HER (THEIR) NAME(S) AND ADDRESS IN THE OFFICIAL JOURNAL? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO					

17. The applicant(s) declare(s) that a viable sample of basic seed of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

8-10-82

(DATE)

Harney J. Walker
(SIGNATURE OF APPLICANT)

(DATE)

(SIGNATURE OF APPLICANT)

Exhibit A

Origin and Breeding History of the Variety

Texas Grano 1105Y

The onion variety, Texas Early Grano 1105Y, was developed from a cross between Texas Early Grano 502 X Ben Shemen in 1972. The pedigree is TEG 502 X Ben Shemen F_2M_4 . The TEG 502 had been developed jointly by the Texas Agricultural Experiment Station and the USDA and released in 1947. Ben Shemen was developed in Israel and was being grown in small commercial acreage in South Texas. The F_1 bulbs were selfed and selections were made as F_2 selections. F_2 selected bulbs were selfed and grown out as F_3 progeny rows in the pink root disease screening plot and then stored for 3 months. Several hundred F_3 progeny rows were observed and bulbs were selected from these lines exhibiting the most desired characteristics. Date of maturity was an important character since the objective was to develop a series of varieties which matured later than TEG 502.

Beginning with the F_3 progenies three generations were made using 3 to 5 bulb masses using identical looking bulbs from the progeny row which also matured on the same date. The fourth mass was a cage increase giving the pedigree $[(F_2M_3)M]$.

It was entered in variety and demonstration tests as TX 442. It exhibits resistance to pink root disease (Pyrenochaeta terrestris), produces high yields of uniform flatten globe bulbs which maintain a fresh bright appearance even after storage. When planted late the bulbs tend to be more round in shape. It matures approximately 3 weeks later than TEG 502 and two weeks earlier than Ben Shemen. It has good storage quality and has a mild sweet flavor being slightly more pungent than TEG 502 and less pungent

than Ben Shemen. It produces a high percentage of single center bulbs.

Leonard M. Pike and Paul Leeper, professors of Horticulture, provided leadership in development of the variety. Research Associates Tom Barkley and Johnny Hobbs provided technical assistance. Onion producers and shippers grew out test plots and provided assistance in evaluations. The Texas Agricultural Experiment Station and the South Texas Onion Committee provided funding for the research and development of this variety. The Texas Agricultural Experiment Station by virtue of employing the principle personnel, providing the major facilities, owning the original genetic stock and providing major financing of the onion breeding program is the owner of Texas Grano 1105Y.

Texas Grano 1105Y has been observed in breeding plots and small commercial trials for three generations and determined to be stable and uniform for commercial standards. It has been very uniform for color and shape. As with all breeding lines all seed in the early generations are cage produced with care taken not to allow umbels to touch the cage sides etc. T.G. 1105Y has been grown in 8 replications of advanced variety trials and several small grower trials in the area from Weslaco, Texas to Las Cruces, New Mexico. As shown from Table 2 it has consistently held true to color with no off types and a very low percentage of doubles, as compared to similar check varieties.

<u>Variety</u>	<u>Color</u>	<u>% Doubles</u>	<u>% Off Type</u>	<u>Remarks</u>
Texas Grano 1105Y	yellow	0.7	0.0	V. Uniform
New Mexico Yellow Grano	yellow	5.9	1.6	White or pink bulbs
Ben Shemen	yellow	4.3	4.3	4% white bulbs

Exhibit B (Revision 3-23-83) Texas Grano 1105Y

Texas Grano 1105Y is a yellow shortday onion variety developed from a cross between Texas Grano 502 x Ben Shemen. It was selected as a late maturing shortday onion to extend the production season in South Texas. It is similar in maturity to New Mexico Yellow Grano, being approximately one week later , and approximately two weeks earlier than Ben Shemen,

With reference to bulb characteristics to support novelty, in comparison to New Mexico Yellow Grano which is the most similar variety, TG 1105Y is a flattened globe shape as compared to the top shape of New Mexico Yellow Grano. It should be mentioned that New Mexico Yellow Grano tends to be intermediate between top and globe shape but never flattened globe.

With reference to leaf scale appearance, TG 1105Y exhibits a bright yellow appearance as compared to a slightly dull appearance for New Mexico Yellow Grano.

With reference to disease resistance, TG 1105Y has good resistance to pink root while New Mexico Yellow Grano has no resistance. We use New Mexico Yellow Grano as the susceptible check in our disease screening nursery.

The following table summarizes the novelty of Texas Grano 1105Y as compared to New Mexico Yellow Grano and Ben Shemen which are the only known varieties having a similar maturity.

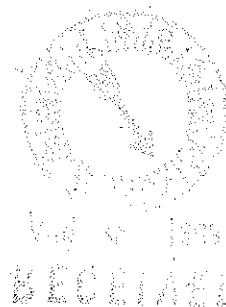


Table 1. A comparison of Texas Grano 1105Y with the two most similar maturing types of short day onion varieties.

<u>Variety</u>	<u>Maturity</u>	<u>Bulb Shape</u>	<u>Leaf Scale</u>	<u>Pinkroot Resistance</u>
Texas Grano 1105Y	May 12-15	Flattened Globe	Bright yellow	good
New Mexico Yellow Grano	May 5-7	Top Shape*	Medium yellow	none
Ben Shemen	May 15-20	Tear drop	Dark brown	none

* New Mexico Yellow Grano is classified as top shape but has been observed to be intermediate between top and globe when grown to large bulbs.

The unique differences of importance for Texas Grano 1105Y is maturity date, pink root resistance, and improved shipping and storage quality. Its maturity is important to extend production of shortday onions to provide a more orderly flow of fresh market onions to the consumer. Please refer to TAES MP 1514 for reasons for development of this variety and others which provide a means of improving an orderly flow of fresh onions to the market.



UNITED STATES DEPARTMENT OF AGRICULTURE
 AGRICULTURAL MARKETING SERVICE
 LIVESTOCK, POULTRY, GRAIN & SEED DIVISION
 BELTSVILLE, MARYLAND 20705

EXHIBIT C
 (Onions)

OBJECTIVE DESCRIPTION OF VARIETY

ONIONS (ALLIUM CEPA L.)

REFERENCES: See Reverse.

NAME OF APPLICANT(S)

FOR OFFICIAL USE ONLY

PVPO NUMBER 8200173

ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code)

VARIETY NAME OR TEMPORARY DESIGNATION

Texas Grano 1105Y

Place the appropriate number that describes the varietal character of this variety in the boxes below.
 Place a zero in first box (e.g., or) when number is either 99 or less or 9 or less.

1. TYPE:

 1 = BULB 2 = BUNCHING 1 = SHORT DAY 2 = LONG DAY TO DEGREES MEAN LATITUDE - ADAPTATION RANGE Maturity (days): 1 = EARLY (75 - 90) 2 = MEDIUM (100 - 120) 3 = LATE (> 130)

2. PLANT

 CM. HEIGHT ABOVE SOIL LINE TO HIGHEST POINT OF ANY FOLIAGE CM. TALLER THAN TEG 502 (Comparable variety) CM. SHORTER THAN Ben Shemen (Comparable variety) 1 = ERECT (Spartan Gem) 2 = INTERMEDIATE 3 = FLOPPY (Epoch)

3. LEAF:

 CM. LONG (before maturity yellowing begins) MM. WIDE MM. THICK AT MIDLENGTH OF LONGEST LEAF Color: 1 = LIGHT GREEN (Early Grano) 2 = MEDIUM GREEN (Yellow Bermuda)
3 = BLUE GREEN (Australian Brown U.C. No. 1) Bloom: 1 = NONE - glossy 2 = LIGHT (Early Grano) 3 = MEDIUM (Crystal Wax) 4 = HEAVY (California Early Red)

4. SHEATH:

 MM. COLUMN LENGTH (Height from soil line to base of lowest succulent leaf) MM. DIAMETER AT MIDLENGTH Scape: CM. FROM SOIL LINE TO BASE OF INFLORESCENCE Scape: MM. DIAMETER AT MIDLENGTH

5. INFLORESCENCE:

Umbel (for seed production)

 MAXIMUM NO. PER PLANT MINIMUM NO. PER PLANT AVERAGE NO. PER PLANT MM. DIAMETER 1. COMPACT 2 = LOOSE/OPEN 3 = SHAGGY Spathes: 1 = LONG BEAK 2 = SHORT BEAK Flower Color: 1 = WHITE 2 = GREEN 3 = BRIGHT GREEN MM. ANTHER LENGTH Anther Color: 1 = LIGHT GREEN 2 = DARK GREEN 3 = YELLOW 4 = PALE YELLOW 5 = CHOCOLATE 6 = RED Pollen Viability: 1 = STERILE 2 = FERTILE Sepal Shape: 1 = LONG POINTED 2 = ROUND SHORT

6. BULB:

AVERAGE NUMBER BULBS PER METER

Size (Harvest): 1 = SMALL (Red Creole) 2 = MEDIUM (Australian Brown U.C. No. 1) 3 = LARGE (Early Grano)

Shape (see attached chart): 1 = GLOBE (White Sweet Spanish) 2 = DEEP GLOBE (Abundance)
 3 = FLT. GLOBE (Australian Brn. U.C. No. 1) 4 = TOP SHAPE (Texas Grano 502)
 5 = DEEP FLAT (Granex) 6 = THICK FLAT (Ebenezer)
 7 = FLAT (Crystal Wax) 8 = TORPEDO-LONG OVAL (Italian Red)

3 88R
1/26/83

CM. HEIGHT ÷ CM. DIAMETER = .8 SHAPE INDEX

1 = INVAGINATE 2 = EVAGINATE

Color (Skin): 01 = BROWN (Australian Brn. U.C. No. 1) 02 = PURPLISH RED (Italian Red)
 03 = BUFF RED (Red Creole) 04 = PINKISH YELLOW (Ebenezer)
 05 = BROWNISH YELLOW (Mt. Danvers) 06 = DEEP YELLOW (Brigham Yellow Globe)
 07 = MEDIUM YELLOW (Early Yellow Globe) 08 = PALE YELLOW (Yellow Bermuda)
 09 = WHITE (White Sweet Spanish) 10 = OTHER (Specify) _____

Color (Interior): 1 = PINK 2 = RED 3 = PURPLISH-RED 4 = WHITE
 5 = CREAM 6 = LIGHT GREEN-YELLOW 7 = DARK GREEN-YELLOW

Scales: 1 = FEW (Crystal Wax) 2 = MEDIUM (Australian Brown U.C. No. 1) 3 = MANY (Sweet Spanish)

Scales: 1 = THICK (Australian Brown U.C. No. 1) 2 = MEDIUM (Red Creole) 3 = THIN (Crystal Wax)

Scale Retention: 1 = VERY GOOD (Australian Brn. U.S. No. 1) 2 = GOOD (Ebenezer)
 3 = FAIR (Red Wethersfield) 4 = POOR (Crystal Wax)

Pucence: 1 = MILD (Early Grano) 2 = MEDIUM (Crystal Wax) 3 = STRONG (White Creole)

Storage: 1 = GOOD (Ebenezer) 2 = FAIR (Yellow Globe Danvers) 3 = POOR (Crystal Wax)

7. DISEASE RESISTANCE (0 = Not Tested; 1 = Susceptible; 2 = Resistant)

BLACK MOLD NECK ROT PURPLE BLOTCH SMUT
 MILDEW PINK ROOT SMUDGE YELLOW DWARF

8. INSECT RESISTANCE: (0 = Not Tested; 1 = Susceptible; 2 = Resistant)

THRIP OTHER (Specify) _____

9. INDICATE A VARIETY THAT MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Leaf Height	Ben Shemen	Flower Ball	TEG 502
Leaf Color	Between Ben Shemen & TEG 502	Bulb Color	TEG 502
Leaf Bloom/Wax	TEG 502	Bulb Size	TEG 502
Flower Stalk	TEG 502	Bulb Shape	Australian Brown
Maturity at same Locantio	Between NMYG & Ben Shemen		

REFERENCES

Jones, H. A. and Mann, L. K. 1963 - Onions and Their Allies, Interscience Publishers, Inc., New York

USDA Misc. Pub. No. 435, 1941 - Descriptions of Types of Principal American Varieties of Onions

Hayward, H. E., 1938 - The Structure of Economic Plants, McMillan, New York (Reprint 1967)

Ag Research, 7 (8):8 - Feb. 1959 - Branding Onion Outcasts

Salem, I. A. 1966 - Inheritance of Onion Bulb Shape, Iowa St. University - PhD thesis

Exhibit D

Additional Description of the Variety

Texas Grano 1105Y

Texas Grano 1105Y is a yellow onion variety developed as one in a series of later maturing types to extend the production season in Texas and other Southwestern onion producing areas. It matures 21 days later than TG 502, 4-7 days later than TG 1030Y, and 1 week earlier than Ben Shemen. It is similar to TG 1030Y in most characteristics except for maturity. It tends to be slightly rounder in shape than TG 1030Y.

The yield potential for TG 1105Y is outstanding as compared to varieties such as New Mexico Yellow Grano and Ben Shemen. Its resistance to pink root and high percentage of marketable bulbs account for its better yields. On pink root infected land, yields have been 50-100% greater than New Mexico Yellow Grano or Ben Shemen. Yields of 800 50 lb. bags per acre have been achieved in South Texas. The variety was selected from several breeding lines which originated from similar crosses between TEG 502 X Ben Shemen. Its selection was based on its maturity date to help extend the South Texas production season, its excellent yields due to resistance to pink root disease, its high percent of marketable bulbs, and its excellent storage quality. It was selected by breeders Leonard Pike, Paul Leeper, and numerous onion growers in Texas and New Mexico. It can be distinguished from other short day onion varieties by maturity date, shape, and excellent storage quality.

TABLE 1. A COMPARISON OF DATES OF MATURITY OF TEXAS GRANO 502 AND FIVE NEW TAES VARIETIES.

<u>VARIETY</u>	<u>Maturity</u>							
	<u>April</u>				<u>May</u>			
	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>
Texas Grano 502	X							
Texas Grano 1015Y	X							
Texas Grano 1025Y				X				
Texas Grano 1030Y						X		
Texas Grano 1105Y							X	

TABLE 2. A COMPARISON OF THE STORAGE - SHIPPING QUALITY OF COMMERCIAL ONION VARIETIES GROWN IN TEXAS TO THE NEW VARIETIES

<u>VARIETY</u>	<u>Storage-Shipping Quality</u>						
	<u>Weeks in Storage</u>						
	<u>2-3</u>	<u>3-4</u>	<u>4-5</u>	<u>5-6</u>	<u>6-7</u>	<u>7-8</u>	
Granex	X						
Y33	X						
TE Grano 502			X				
Ringer			X				
New Mexico Yellow Grano	X						
Texas Grano 1015Y				X			
Texas Grano 1025Y					X		
Texas Grano 1030Y						X	
Texas Grano 1105Y					X		